

New

A1592

**8 Channel 9 kV/200-
20 μ A Individual
Floating Channel
Dual Range Board**



Features



- 8 independently controllable High Voltage channels
- Output voltage: 0 ÷ 9000 V
- Dual range current:
 - High Power: 200 μ A (1 nA monitor resolution)
 - High resolution: 20 μ A (50 pA monitor resolution)
- Available with Negative / Positive Polarity
- CPE HV connectors
- **Floating Type:** Individual Floating
- Low ripple
- Under/over-voltage alert, overcurrent and max. voltage protection
- Interlock logic for unit enable
- Software Tools for easy channel management

Description

The CAEN Mod A1592 is a single width board (5 TE wide) that houses 8 independent high voltage channels.

All channels have independent floating returns, isolated up to 50 V from each other and from chassis/crate ground (**Individual Floating** channel) The board is available with positive or negative output polarity. Channels are delivered with **CPE HV** connectors. Consult our **connectors reference page** for technical information.

The output voltage range is **0 ÷ 9000 V**, with **200 mV** monitor resolution. The output channels offer **dual current ranges** (software selectable):

High Power: 0 ÷ 200 μ A	High Resolution: 0 ÷ 20 μ A
I set resolution: 4 nA	I set resolution: 4 nA
I mon resolution: 1 nA	I mon resolution: 50 pA

Independently programmable for each channel:

Output voltage:	0 ÷ 9000 V	Step: 200 mV
Current limit (Iset):	0 ÷ 200 / 20 μ A selectable	Step: 4 nA
V Ramp up/down:	1 ÷ 500 V/s	Step: 1 V/s
TRIP parameter:	0 ÷ 999.9 s; 1000 s = Infinite	Step: 0.1 s

Safety features include:

- **Channels:** can be enabled or disabled through the Global Interlock logic.
- **Overvoltage and Undervoltage warning:** when the output voltage differs from the programmed value.
- **Overcurrent detection:** when a channel attempts to exceed the programmed current limit, it signals an "overcurrent" condition and enters TRIP status. The output voltage is adjusted to keep the current below the programmed limit for a programmable TRIP time, after which the channel is switched off. If TRIP is set to "constant current mode", the channel behaves as a current source.
- **Hardware VMAX:** maximum output voltage can be set, via front panel potentiometer, at the same common value for all the board channels. VMAX value can be read out via software.

To create cables compatible with the CPE HV connectors on this board, CAEN provides the mate cable connector (Model A997).

CAEN provides a complete software range to control, monitor and configure its Power Supply products.

- **GECO2020 General Control Software**
- **CAEN HV Wrapper Library**
- **HiVoCS web tool**
- **OPC Server for CAEN Power Supplies**
- **EPICS Service**

These tools, which support the most used operating systems, ranging from low level libraries (**CAEN HV Wrapper Library**), to be used as a source for customer designed software, to the WEB interface (**HIVOCS**) available on each mainframe, up to the all-inclusive Control Software (**GECO2020**) with user friendly graphical interfaces, to meet any application needs.

Advanced control via OPC Server (**CAEN OPC Server**) and EPICS (**EPICS IOC**) is supported, to easily include CAEN power supplies within existing setups featuring such standards.

- **All tools are available for free download.**

Universal Multichannel Power Supply Systems (Mainframes)

Universal Multichannel Power Supply Systems, or Mainframes, are modular systems designed to house and control High Voltage (HV) and Low Voltage (LV) boards, providing power for particle detectors and their

associated electronics in standard 19" racks. CAEN offers four mainframe versions:

- **SY4527:** A large experimental system. This 19" wide / 8U high mainframe can house **up to 16 HV/LV boards**. It offers a power output from 600W up to a maximum of **4200W**, depending on installed Power Supply Units and display type. Local control is optionally available via a 10.4" or 5.7" LCD Touchscreen.
- **SY5527:** A more compact laboratory version. This 19" wide / 4U high mainframe can house **up to 6 HV/LV boards**. Its power output ranges from 600W up to a maximum of **1800W**, depending on Power Supply Units. Optional local control is available via a 5.7" LCD Touchscreen.
- **SY4527LC:** A cost-effective alternative with a shorter depth (~20cm compared to standard SYx527). This 19" wide / 8U high mainframe houses **up to 10 boards** and includes a **600W power supply**. It does not include an LCD display. It is fully compatible with SY4527 and SY5527 boards.
- **SY5527LC:** Also a cost-effective, shorter depth alternative (~20cm compared to standard SYx527). This 19" wide / 4U high mainframe houses **up to 4 boards** and includes a **400W power supply**. It does not include an LCD display. It is fully compatible with SY4527 and SY5527 boards.

All systems offer modular design for simplified upgrades and maintenance and can be controlled remotely via Ethernet.

Technical Specifications

No. of Channels

8 Individual Floating ($\pm 50V$ isolation)

Output Voltage

10÷9 kV

Polarity

Positive, Negative depending on purchased version

Max. Output Current

Dual range:

- High Power: 200 μA
- High Resolution: 20 μA

Voltage Set Resolution

200 mV

Voltage Monitor Resolution

200 mV

Current Set Resolution

4 nA

Current Monitor Resolution

- High Power: 1 nA
- High Resolution: 50 pA

VMAX hardware

0÷9 kV common for all the board channels

VMAX hardware accuracy

$\pm 2\%$ of FSR

VMAX software

0÷9 kV settable for each channel

VMAX software resolution

1 V

Ramp Up/Down

1÷500 Volt/sec, 1 Volt/sec step

Maximum output power

1.8 W per channel

Voltage Ripple

- 20 ÷ 1000 Hz: Typ <5 mVpp; Max <10 mVpp
- 1 ÷ 20000 kHz: Typ <3 mVpp; Max <5 mVpp

Voltage Monitor vs. Output Voltage Accuracy

± 0.3% ± 0.5 V typical

Voltage Set vs. Output Voltage Accuracy

± 0.3% ± 0.5 V typical

Current Monitor vs. Output Current Accuracy

- High Power: ± 1% ± 20 nA typical
- High Resolution: ± 1% ± 2 nA typical

Current Set vs. Output Current Accuracy

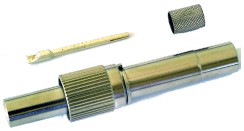
- High Power: ± 1% ± 20 nA typical
- High Resolution: ± 1% ± 2 nA typical

Ordering Options

Code	Description	
WA1592XNAAAA	A1592N - individual floating 8 ch -9 kV/0.2 mA board	RoHS
WA1592XPAAAA	A1592P - individual floating 8 ch +9 kV/0.2 mA board	RoHS

Accessories

A997



HV coaxial cable connector for A1526

HV CABLES



High Voltage Cable Assemblies

Related Products

SY5527LC



Universal Multichannel Power Supply System Low Cost / 19"wide, 4U-high (4 slot)

SY5527



Universal Multichannel Power Supply System / 19"wide, 4U-high (6 slot)

SY4527



Universal Multichannel Power Supply System / 19"wide, 8U-high (16 slot)

SY4527LC



Universal Multichannel Power Supply System Low Cost / 19"wide, 8U-high (10 slot)

Gallery



CPE HV connector (Factory Name: CPE
23.100.151.046)



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